	Stage 1 (intervention)	Stage 2	Stage 3	Stage 4
YEAR 7 LAT Grade	Emerging (not secondary read) 1-3	Secure 4-6	Advanced 7-8	Advanced + 9
YEAR 8	1	Emerging 2-3	Secure 4-6	Advanced 7-9
Autumn 1	Place Value	Place Value- Addition and subtraction	Number	Graphs and proportion
Autumn 2	Calculating using the 4 operations	Multiplication and division	Algebra	Algebra
Spring 1	Geometry	Fractions, Decimals and Percentages	Geometry and Measure	Geometry
Spring 2	Fractions			
Summer 1	Data	Algebra Introduction	Ratio, Proportion & Rates Of Change	Equations
Summer 2	Gap analysis	Data	Probability	Statistics

Stage 1	Topic	Learning Objectives	Notes
Autumn 1	**Place Value**	Read and write whole numbers and decimals in words and figures Recognise the value of each digit in whole numbers and decimals Multiply and divide by 10 and 100	
Autumn 2	**Calculating using the 4 operations**	Mental and written methods for addition, subtraction, multiplication and division (including decimals)	See DASCo Calculation policy from key documents folder
Spring 1	**Geometry**	Name and describe (using appropriate vocabulary) common 2d and 3d shapes	
Spring 2	**Fractions**	Understand and name parts of a fraction (vincular, denominator and numerator) Find equivalent fractions Simplify fractions	See DASCo Fraction Policy from key documents folder
Summer 1	**Data**	Construct, read and interpret tally charts Construct, read and interpret bar and bar line charts.	
Summer 2	**Gap analysis Based on PLC's**		

Stage 2	Topic	Learning Objectives	Activities
Autumn 1	**Place Value-Addition and subtraction**	-understand and use place value for decimals, measures and integers of any size -order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥ -use standard units of mass, length, time, money and other measures, including with decimal quantities -round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] -use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative -recognise and use relationships between operations including inverse operations -derive and apply formulae to calculate and solve problems involving: perimeter of triangles, parallelograms, trapezia -calculate and solve problems involving: perimeters of 2-D shapes (including circles), and composite shapes	
Autumn 2	**Place Value-Multiplication and division**	-use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property -use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative -use standard units of mass, length, time, money and other measures, including with decimal quantities -recognise and use relationships between operations including inverse operations -derive and apply formulae to calculate and solve problems involving: area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) -calculate and solve problems involving: areas of circles and composite shapes -calculate the mean	
Spring	**Fractions, decimals & percentages**	-find equivalent fractions and give fractions in their simplest form -compare and order fractions and decimals -change between mixed numbers and improper fractions -find a fraction of a quantity -define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using	

		percentages, and work with percentages greater than 100% -interpret fractions and percentages as operators		
Summer 1	**Algebra**	-use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals -use and interpret algebraic notation, including: ab in place of a × b 3y in place of y + y + y and 3 × y a2 in place of a × a, a3 in place of a × a × a; a2 b in place of a × a × b b a in place of a ÷ b coefficients written as fractions rather than as decimals brackets -substitute numerical values into formulae and expressions, including scientific formulae -understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors -simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms -work with coordinates in all four quadrants		
Summer 2	**Statistics**	-describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) -construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data		

Stage 3	Topic	Learning Objectives	Activities
Autumn 1	**Number**	-use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations -use a calculator and other technologies to calculate results accurately and then interpret them appropriately -appreciate the infinite nature of the sets of integers, real and rational numbers.	
Autumn 2	**Algebra**	-simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms multiplying a single term over a bracket taking out common factors expanding products of two or more binomials -understand and use standard mathematical formulae; rearrange formulae to change the subject -model situations or procedures by translating them into algebraic expressions or formulae and by using graphs -use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) - interpret/represent on a numberline and solve inequalities	
Spring	**Geometry & Measure**	-draw and measure line segments and angles in geometric figures, including interpreting scale drawings -derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line -describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric -derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies -apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles -understand and use the relationship between parallel lines and alternate and corresponding angles -derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons	

Summer 1	**Ratio, Proportion and rates of change**	-change freely between related standard units [for example time, length, area, volume/capacity, mass] -express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 -use ratio notation, including reduction to simplest form -divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio -understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction -relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions -solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics	
Summer 2	**Probability**	-record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale -understand that the probabilities of all possible outcomes sum to 1 -generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities.	

Stage 4	Topic	Learning Objectives	Activities
Autumn 1	**Graphs and proportion**	-solve problems involving direct and inverse proportion, including graphical and algebraic representations -use compound units such as speed, unit pricing and density to solve problems. -use scale factors, scale diagrams and maps - interpret and compare numbers in standard form $A \times 10^n$ $1 \leq A < 10$, where n is a positive or negative integer or zero -use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$	

Autumn 2	**Algebra**	-generate terms of a sequence from either a term-to-term or a position-to-term rule -recognise arithmetic sequences and find the nth term recognise geometric sequences and appreciate other sequences that arise. -expand single and double sets of brackets -Factorisation of linear and quadratic expressions	
Spring	**Geometry**	-use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles -apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs -use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles -use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D -identify properties of, and describe the results of, translations, rotations and reflections applied to given figures -identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids -exploring trigonometry with a 30-60-90 triangle	
Summer 1	**Equations**	-recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane -interpret mathematical relationships both algebraically and graphically -reduce a given linear equation in two variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically -use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations -find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs	
Summer 2	**Statistics**	-enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams -describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs. -find the mean and estimated mean from a frequency table -use box plots to compare 2 data sets -interpret and construct stem and leaf diagrams	